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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/633,432 | 08/01/2003 | Vincent J. Zimmer | INTEL/16808 | 4540 |

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| EXAMINER |
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PATEL, HETUL B

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| ART UNIT | PAPER NUMBER |
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2186

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| MAIL DATE | DELIVERY MODE |
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07/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/633,432

Applicant(s)

ZIMMER ET AL.

Examiner

Hetul Patel

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to communication filed on September 14, 2006. This amendment has been entered and carefully considered. Claims 1-45 are again presented for examination.
2. Applicant's arguments filed on September 14, 2006 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 4-6, 8-13, 15-17, 19-21, 23-28, 30-32, 34-36, 38-43 and 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Zimmer et al. (USPN: 2004/0103272) hereinafter, Zimmer.

The applied reference has a common assignee and inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e)

might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per claims 1 and 10-13, Zimmer teaches a method of migrating storage from a temporary memory location in a temporary memory (i.e. the data cache 18 in Fig. 1) to a main memory location in a main memory (i.e. the system memory 25 in Fig. 2), the method comprising: copying content from the temporary memory location to the main memory location (i.e. upon system memory initialization, the content of data cache is copied to the system memory; see paragraph [0020]). The further limitations of, calculating a migration factor between the temporary memory location and the main memory location; and modifying a value in the main memory that identifies the temporary memory location to identify the main memory location, are inherently embedded in the method taught by Zimmer because without performing calculating and modifying steps, there is no reason to copy the content (i.e. the stack and heap data) of the data cache to the main/system memory (e.g. see Paragraph [0020] and Figs. 1-2). In other words, after copying the content of the data cache to the main/system memory, the migration factor (i.e. the difference between the location in the data cache and in the system/main memory, and vice versa) has to be calculated; and copied data (i.e. heap and stack data) has to be read/written from the system memory since the data cache is unlocked and may be flushed.

As per claims 2 and 3, Zimmer teaches the claimed invention as described above and furthermore, Zimmer teaches that the content comprises stack and heap data (e.g. see Paragraph [0015] and paragraph [0018], lines 1-2).

As per claim 4, Zimmer teaches the claimed invention as described above and furthermore, Zimmer teaches that the temporary memory comprises a cache memory (i.e. the data cache 18 in Fig. 1).

As per claims 5-6 and 8, Zimmer teaches the claimed invention as described above and furthermore, Zimmer teaches that upon initialization of the system memory, the content of the data cache is copied to the system memory; and the data cache is unlocked for general purpose use (e.g. see paragraph [0020] and block 40 in Fig. 3), i.e. the "dirty" data in the data cache is sent to the system/main memory, in other words, the temporary memory/data cache is flushed/cleared (or placed in eviction mode) by copying data from the it to the system memory as claimed.

As per claim 7, Zimmer teaches the claimed invention as described above and furthermore, Zimmer teaches that the cache memory comprises one of (i) an L1 cache memory, and (ii) an L2 cache memory (i.e. the on-board processor cache, 16 and 18 in Fig. 1) (e.g. see paragraph [0012]).

As per claim 9, Zimmer teaches the claimed invention as described above and furthermore, Zimmer teaches that the main memory (i.e. the system memory 25 in Fig. 2) comprises a random access memory (i.e. one of RAM, SDRAM, DDR, RDRAM) (e.g. see paragraph [0019]).

As per claim 15, Zimmer teaches the claimed invention as described above and furthermore, Zimmer teaches that the copying of content from the temporary memory location to the main memory occurs during pre-boot (i.e. during power-on or system reset) (e.g. see Paragraphs [0012]-[0013] and blocks 28-34 in Fig. 3).

As per claims 16-28 and 30, see arguments with respect to the rejection of claims 1-13 and 15, respectively. Claims 16-28 and 30 are also rejected based on the same rationale as the rejection of claims 1-13 and 15, respectively.

As per claims 31-43 and 45, see arguments with respect to the rejection of claims 1-13 and 15, respectively. Claims 31-43 and 45 are also rejected based on the same rationale as the rejection of claims 1-13 and 15, respectively.

4. Claims 14, 29 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmer in view of Meyer (USPN: 2002/0099909).

As per claims 14, 29 and 44, Zimmer teaches the claimed invention as described above but does not teach that the value in the main memory is verified as identifying the temporary memory by determining if the value is greater than a bottom of the temporary memory and is less than a top of the temporary memory. Meyer, on other hand, teaches that the value in the main memory is verified as identifying the temporary memory by determining if the value (i.e. the address received from the processor 10 in Fig. 1) is greater than a bottom of the temporary memory and is less than a top of the temporary memory (i.e. within the main memory 100 in Fig. 1 or the low-latency memory 130 in Fig. 1; the temporary memory in this application) (e.g. see paragraph [0028] and

Art Unit: 2186

Fig. 1). Accordingly, it would have been obvious to one ordinary skilled in the art at the time of the current invention was made to implement the teaching of Meyer in the method, system and article of manufacture taught by Zimmer so it can be determined whether to modify the value in main memory during migration before the boot process ends.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

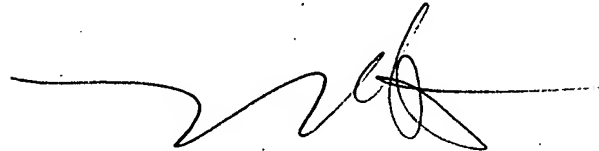
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hetul Patel whose telephone number is 571-272-4184. The examiner can normally be reached on 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2186

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HBP/
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A handwritten signature in black ink, appearing to read 'Matthew Kim', with a long horizontal line extending to the left.

MATTHEW KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100